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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,733	02/13/2002	Theodore Clark Brown	20-LC-120409 (330)	6371

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BEUSSE BROWNLEE WOLTER MORA & MAIRE, P. A.  
390 NORTH ORANGE AVENUE  
SUITE 2500  
ORLANDO, FL 32801

EXAMINER
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NGUYEN, XUAN LAN T

ART UNIT	PAPER NUMBER
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3683

DATE MAILED: 11/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/074,733

**Applicant(s)**

BROWN ET AL.

**Examiner**

Lan Nguyen

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 25 August 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3-5,7-11 and 13-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-5,7-11 and 13-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 25 August 2003 is: a) ☐ approved b) ☒ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All   b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawing was received on 8/25/03. These drawings are not approved because the V-shaped corner members do not appear to be corresponding to the corners of the duct.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 19-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Re: claims 19-22, the limitation "a V-shape connected to the duct and disposed at an angle relative to a longitudinal axis of the duct to become closer to the duct" is confusing. The V-shape corner member is connected to the duct. "To become closer to the duct" does not make sense.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 3 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Guntner.

Re: claim 3, Guntner shows an apparatus for at least partially normalizing an axial flow velocity distribution of a flow of cooling air, as in the present invention, comprising: a fan 4, a locomotive dynamic braking grid stack 6, a duct 9, 8, 7 bounding a flow of cooling air; a flow turning vane 9A comprising a corner member disposed proximate a corner of the duct and extending into a relatively higher velocity annular portion of the flow of cooling air and disposed remote from a center portion of the flow of cooling air for directing a portion of the cooling air from the relatively higher velocity annular portion of the flow of cooling air into a relatively lower velocity corner portion of the flow of cooling air without restricting the center portion of the flow of cooling air as shown in figure 3.

Re: claim 5, figure 3 further shows an annular member 3 as claimed; the corner member 9A is connected to the duct and the annular member 3 is connected to the corner member via the duct which provides support for both the corner member and the annular member without restricting the center portion of the flow of the cooling air.

6. Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by pages 1 and 2 of paper A3 submitted by the Applicant.

Pages 1 and 2 of paper A3 submitted by the Applicant, show that "Mixed flow fans offer high flow and high pressure. Applications ... include: ... \*brake resistor cooling ... ". It is inherent that a brake resistor would include a plurality of electrical

resistors packaged in a grid stack and a duct for directing the flow of cooling air from the fan to the grid stack for cooling the plurality of electrical resistors.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 4 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guntner in view of Presz, Jr. et al.

Guntner's apparatus, as rejected in claim 3, is silent of the structure of the corner member. Presz, Jr. teaches a diffuser with V-shaped corner members in figure 4 and the arrangement of such diffuser in an existing duct as in figure 26 for directing fluid flow into the corners of a square duct. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed Guntner's apparatus with a V-shaped corner member as taught by Presz, Jr. in order to ensure proper dispersion of the air from a round duct to the corners of a square duct as taught by Presz, Jr.

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guntner.

Guntner shows the annular member 3 to distribute the air into the center of the flow of the cooling air. To provide a second annular member for a multiplied effect requires only routine skill in the art. *St. Regis Paper Co. v. Bemis Co., Inc.*, 193 USPQ

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8, 11 (7<sup>th</sup> Cir. 1977). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided a second annular member to doubling the effect of directing the air at the same time reducing the turbulence in comparison to having only one annular member.

10. Claim 8-11, 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guntner in view of pages 1 and 2 of paper A3 submitted by the Applicant.

Re: claims 8 and 9, Guntner shows a cooling apparatus for a locomotive dynamic brake resistor grid stack as in the present invention, the cooling apparatus comprising: a fan 4; a duct 9, 8, 7 for directing the flow of air away from the fan to an inlet of a locomotive dynamic brake resistor grid stack 6; and a flow directing vane 9A disposed within the duct for directing a portion of the flow of air from the relatively higher velocity area into the relatively lower velocity area to at least partially normalize a flow velocity distribution of the air entering the inlet of the grid stack. Guntner is silent of the type of fan. Paper A3 teaches that mixed flow fans are for applications including brake resistor cooling wherein a mixed flow fan would induce a flow of air having a cross-section with a relatively higher velocity area and a relatively lower velocity area. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed a mixed flow fan as taught by paper A3 to be used in Gunter's apparatus to improve the cooling capability of the apparatus as taught by paper A3.

Re: claim 10, Guntner further shows an annular member 3.

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Re: claim 11, Guntner shows the annular member 3 to distribute the air into the center of the flow of the cooling air. To provide a second annular member for a multiplied effect requires only routine skill in the art. *St. Regis Paper Co. v. Bemis Co., Inc.*, 193 USPQ 8, 11 (7<sup>th</sup> Cir. 1977). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided a second annular member to doubling the effect of directing the air at the same time reducing the turbulence in comparison to having only one annular member.

Re: claims 13 and 14, the rejection of claims 8 and 9 meet all the limitation of claims 13 and 24.

11. Claims 15-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guntner in view of pages 1 and 2 of paper A3 submitted by the Applicant.

Re: claim 15, Guntner shows a locomotive dynamic braking grid package, as in the present invention, comprising: a plurality of electrical resistors packaged in a grid stack 6; a fan 4 for producing a flow of cooling air; and a duct 9, 8, 7 for directing the flow of cooling air from the fan to the grid stack for cooling the plurality of electrical resistors. Guntner is silent of the type of fan being used. Pages 1 and 2 of paper A3, submitted by the Applicant, shows a mixed flow fan for use in cooling a resistor stack. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have employed a mixed flow fan as taught by paper A3; since mixed flow fans are old and well-known as the type of fans being used for cooling a resistor stack due to its ability to offer high flow.

Re: claims 16 and 17, Guntner further shows in figure 3, annular flow turning vane 3 and corner member 9A.

Re: claim 18, Guntner's apparatus, as rejected in claim 15, lacks a second annular flow directing vane to cooperate with said first vane. The Examiner takes an Official Notice that having multiple or repeating elements is an old and well-known concept. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Guntner's apparatus with a second annular flow directing vane to cooperate with said first vane to increase the flow directing capability of the assembly, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

12. Claims 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guntner in view of pages 1 and 2 of paper A3 submitted by the Applicant, and further in view of Presz, Jr. et al.

Guntner's apparatus, as rejected in claims 8, 13 and 15 (as in paragraph #8), is silent of the structure of the corner member. Presz, Jr. teaches a diffuser with V-shaped corner members in figure 4 and the arrangement of such diffuser in an existing duct as in figure 26 for directing fluid flow into the corners of a square duct. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have constructed Guntner's apparatus with a V-shaped corner member as taught by Presz, Jr. in order to ensure proper dispersion of the air from a round duct to the corners of a square duct as taught by Presz, Jr.



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13. Claims 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Guntner.

Guntner shows an apparatus for at least partially normalizing an axial flow of cooling air, as in the present invention, comprising: a first annular flow directing member

3. Guntner lacks a second annular flow directing vane to cooperate with said first vane. The Examiner takes an Official Notice that having multiple or repeating elements is an old and well-known concept. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Guntner's apparatus with a second annular flow directing vane to cooperate with said first vane to increase the flow directing capability of the assembly, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

### ***Response to Arguments***

14. Applicant's arguments filed 8/25/03 have been fully considered but they are not persuasive. The rejection has been modified to meet the amended claims wherein the flow directing vane is the corner member 9A. Said corner member is located remote from the center and would not restrict the flow of air in the center.

### ***Conclusion***

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lan Nguyen whose telephone number is 703-308-8347. The examiner can normally be reached on M-F, 8 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Lavinder can be reached on 703-308-3421. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-4177.

XLN

XLN  
November 4, 2003

  
JACK LAVINDER  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 3600